

# IBSAT Quantitative Aptitude Formula Sheet

Quick Revision Guide for IBSAT Preparation

## Percentages

- Percentage =  $(\text{Part/Whole}) \times 100$
- Increase% =  $(\text{Increase/Original}) \times 100$
- Successive change =  $a + b + ab/100$

## Profit & Loss

- Profit = SP - CP
- Profit% =  $(\text{Profit/CP}) \times 100$
- Loss% =  $(\text{Loss/CP}) \times 100$
- SP =  $CP \times (100 + \text{Profit\%})/100$

## Ratio & Proportion

- $a:b = a/b$
- Fourth Proportional =  $(b \times c)/a$
- Direct proportion:  $x/y = \text{constant}$

## Averages

- Average =  $\text{Sum of observations} / \text{Number of observations}$
- Weighted Average =  $\text{Total weighted value} / \text{Total weight}$

## Time & Work

- If A completes work in x days, one day work =  $1/x$
- Combined work = Sum of individual efficiencies
- Work = Efficiency  $\times$  Time

## Time, Speed & Distance

- Speed =  $\text{Distance/Time}$
- Distance = Speed  $\times$  Time
- Relative Speed (opposite directions) = Sum of speeds
- Relative Speed (same direction) = Difference of speeds

## Simple & Compound Interest

- SI =  $(P \times R \times T)/100$
- Amount = P + SI
- CI =  $P(1 + R/100)^n$
- CI = Amount – Principal

## Number System

- $\text{LCM} \times \text{HCF} = \text{Product of two numbers}$
- If  $N = p^a \times q^b$  then number of factors  $= (a+1)(b+1)$

## Algebra

- $(a+b)^2 = a^2 + b^2 + 2ab$
- $(a-b)^2 = a^2 + b^2 - 2ab$
- $a^2 - b^2 = (a+b)(a-b)$

## Geometry

- Area of Rectangle  $= l \times b$
- Area of Triangle  $= \frac{1}{2} \times \text{base} \times \text{height}$
- Area of Circle  $= \pi r^2$
- Circumference  $= 2\pi r$

## Mensuration

- Cylinder Volume  $= \pi r^2 h$
- Cylinder TSA  $= 2\pi r(h+r)$
- Sphere Volume  $= \frac{4}{3} \pi r^3$
- Sphere Surface Area  $= 4\pi r^2$

## Permutation & Combination

- $nPr = \frac{n!}{(n-r)!}$
- $nCr = \frac{n!}{r!(n-r)!}$

## Probability

- Probability  $= \frac{\text{Favorable outcomes}}{\text{Total outcomes}}$
- $0 \leq P(E) \leq 1$
- $P(\text{not } E) = 1 - P(E)$

## Data Interpretation

- Percentage Change  $= \frac{(\text{New} - \text{Old})}{\text{Old}} \times 100$
- Ratio comparison and approximation techniques are important

## **Last-Minute IBSAT Quant Tips**

Memorize percentage-fraction conversions, squares up to 30, cubes up to 20, common roots, and arithmetic formulas. Practice mental calculations daily and focus on speed and accuracy.